



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

AN INTROSPECTIVE ANALYSIS OF THE ASSOCIATION-REACTION CONSCIOUSNESS

By EMILY T. BURR and L. R. GEISSLER

The present study was begun in the Psychological Laboratory of Cornell University during the Summer Session of 1910 and later continued by one of the writers at Columbia University. In the mean time the other published a preliminary report of some of the results obtained at Cornell,¹ and the present paper is to complete the account of the work.

In the earlier experiments an auditory presentation of the stimulus word was used; but this was later replaced by visual exposure, and the Hipp chronoscope took the place of the stop-watch. Otherwise the experiments were carried on in the familiar way. At the beginning of a series the observer had to choose between two pictures, or two stories, or two boxes containing a collection of articles, to familiarise himself carefully with the one selected, and then to seat himself before the apparatus. The material consisted of four pairs of short stories, four pairs of pictures, and two pairs of boxes. The members of each pair were as different as possible. For instance, a picture of a stone-quarry was paired with a picture of family life, and a story of hardship and tragedy was paired with a humorous, inconsequential tale. In the top of each of the boxes was placed an envelope containing written directions regarding the careful examination of the box. With each box was connected some joke or surprising incident. For example, the observer was told to unwrap a certain small package in one of the boxes and to examine carefully the lobster, which turned out to be an elongated convex mirror in which the observer saw his face reflected. Another box contained live flies in a small bottle, which was so arranged that the observer inadvertently let them out. Likewise the pictures and stories were selected on the basis of the strength of their emotional appeal, in order to make the complex as intense and vivid as possible. The observers were in each case comfortably seated, generally separated from the experimenter by a screen, and the room was so arranged that their attention was not distracted.

The first instruction given to the observer was: "Choose one or the other of these two materials (pictures, stories, or boxes), examine it carefully, and do not let the experimenter know which one you have selected." Immediately after the examination of the selected material the following instruction was given: "I am going to show you (or pronounce to you) one by one, a series of words, and you are to give as soon as possible, in response to each, a word that is associated in your mind with my word; but do not, if you can help it, give one that is connected with your choice. Then I want you to

¹ L. R. Geissler, A Preliminary Introspective Study of the Association-Reaction Consciousness, this JOURNAL, xxi, 1910, 597-602.

describe as clearly and concisely as you can your state of mind and its contents from the time of the ready-signal until you gave your associated word." To this was later added: "Give the mental events in their temporal sequence and try to give more details of the background of consciousness." The experimenter avoided all questioning and other suggestive remarks.

The observers at Cornell University were Miss E. Gunning (*Gu*), then Inspector of Schools at Amsterdam, Holland; and Messrs. G. C. Basset (*Ba*), R. Hugins (*H*), then Assistant in the Psychological Laboratory, Dr. T. Okabe (*O*), late Fellow in Psychology, and Dr. L. R. Geissler (*G*), then Instructor in the Department. At Columbia University the observers, with the exception of one senior in the Law School, were students in the Department of Psychology accustomed to serve as subjects in experimental work. They were Misses Ellison (*E*), Boshitsky (*Bo*), and Kupers (*K*), and Messrs. B. K. Fiske (*F*), and Myers (*M*). Altogether about one thousand association-reactions were obtained.

The quantitative results do not present anything new. Occasionally an irrelevant stimulus is followed by a delayed association, which is usually due to the fact that too many ideas rush through the background of consciousness and interfere with one another and with their articulation in a reaction. Such cases—they also occur where no instruction to conceal anything exists—are not so frequent as to influence to any great extent the average association-time for irrelevant stimuli. The longest reaction-times occur invariably with critical words; and their mean variation is considerably larger than that for irrelevant words. Critical stimuli were sometimes answered by quick and insignificant associations; but if followed up by one or two more critical stimuli, the complex could no longer conceal itself, and was manifested either in delayed or in significant associations or in both together.

Of much greater importance are our qualitative results as revealed in the introspections. They have led us to the conclusion that what is usually spoken of as the concealing of a complex is but a special case of a consciousness under negative instruction, the only essential difference being a greater degree of emotional vividness and strength in the complex. Consciousness under a negative instruction differs, as one of the writers has shown in a previous article,² from a consciousness under a positive instruction in that the former involves a stage of suppression and a conflict of at least two determining tendencies, while the latter requires only one such tendency. In order to prove our contention we may now compare the consciousness while trying to conceal a complex in the association-reactions, referred to hereafter as A.R. experiments, with the consciousness under a negative instruction, abbreviated into N.I. experiments.

The first similarity lies in the nature of the *Aufgabe* itself; for "not to betray oneself" is only one particular negative instruction. It does not even matter whether linguistically the instruction is formulated in a positive way; its intent is accepted negatively. When we remember how early and how frequently in childhood the instruction "don't" occurs, we need not be surprised at the readiness to respond to negative instructions. They are, furthermore, sanctioned by the principle of mental economy; for it is much simpler and easier to exclude one impossible way of action than to include all the possible

²L. R. Geissler, Analysis of Consciousness under Negative Instruction, this JOURNAL, xxiii, 1912, 183-213.

ways. Now it will be remembered that our particular instruction in the A.R. experiments accidentally emphasised somewhat the negative aspect by its linguistic form. The N.I. experiments, which were carried on a whole year later, were suggested by Langfeld's first article,³ and their instructions were taken from his work, which *G* did not happen to see until his own preliminary report was published. It will be seen, therefore, that the two investigations were completed independently of each other, with no initial intention in *G*'s mind to compare the two consciousnesses. In fact, the similarity became evident only while the results of the second investigation were being prepared for publication.⁴ We wish to emphasise this fact in order to exclude the possible suspicion that our first instruction was purposely framed in the negative form in order to produce an artificial similarity. But, even aside from this fact, it is self-evident that in any Freudian complex of concealment a negative task of suppression is involved, whether it be set by conventional rules of society or by the individual himself in accordance with his own nature, his own ideals and determinations. In all these cases the underlying thought is: I must not or I ought not to do so-and-so. Since, then, here as well as in our A.R. experiments the virtual instruction is 'not to betray oneself,' and in the N.I. investigation the actual instruction was 'not to name the picture or object exposed,' it should not be surprising that the consciousnesses involved in these cases are similar in all essentials, as the following descriptions and illustrations will show them to be.

Some of the introspections on the fore-period read, in the case of *O* for example, as follows: "My bodily posture was stiff and quiet; I held my breath, kept my right ear turned toward the experimenter, and had many organic sensations." At the signal 'Ready' he tended to assume an attitude of indifference, in which there was no particular attempt to control the mental processes (no one content of which was very vivid), and he found it impossible to localise the organic complex and the strain sensations. *Ba* says that "the effort to fix the attention" is accompanied by a strong tendency to assume some specific bodily attitude. Generally, therefore, at the signal 'Ready' he sits with his head resting on his right hand, his right elbow on his knee, his brows contracted, his jaws set, and his lips stiff. A very similar description is quoted in *G*'s preliminary report,⁵ and the accounts of the other observers do not differ essentially from these examples. *H* experienced also many verbal ideas, as "I'm ready for the stimulus, let it come," or "I'm on my guard, I won't let her catch me this time," and the like. The women observers speak with greater emphasis of the "intense excitement" during the waiting period, and of "fears of self-betrayal" present in verbal form and "strongly unpleasant." In these descriptions we do not find a literal repetition of the instruction, but it is nevertheless represented either in a modified verbal form or in the whole bodily and mental attitude toward the experiment. There is one difference between these fore-periods and those of the N.I. experiments. In the latter, the fore-period became more and more mechanical, poor in conscious contents,

³ H. S. Langfeld, *Suppression with Negative Instruction*, *Psych. Bull.*, vii, 1910, 200-208.

⁴ L. R. Geissler, this JOURNAL, xxiii, 1912, 212 says: "A comparison of the consciousness under N.I. with the consciousness of the hidden complex is reserved for a future occasion."

⁵ L. R. Geissler, this JOURNAL, xxi, 597.

and vague and faint in their degree. In the former, no such degeneration was noted, presumably because of the element of uncertainty, since not every stimulus was relevant, so that attention was kept alert. The same effect would probably have been produced in the N.I. experiments by the introduction of blank stimuli.

It had been found in the N.I. investigation that the mid-period could be subdivided into three stages, those of recognition, of suppression, and of suspense or search. The same thing is possible in the present work. In the first stage the stimulus-word is received and as a rule carefully examined as to its connection with the chosen material. For example, *K* says: "My first thought after any stimulus is given me is of the instruction. When I see that no connection can exist between the stimulus-word and the experimental material, I can find a reaction and give it with a deep sense of relief. When I realise that the stimulus is a critical one, I often have unpleasant blood pressure in my face, a palpitating feeling, and I say to myself, 'oh, that's dangerous.'" Similarly *Gu* says: "I try each word to see if it be a safe stimulus." *O* finds that he has mentally gone over the entire material, point by point, and when he realises that there is "no danger" in the stimulus, he assumes a relaxed attitude and the formation of a reaction is automatic. *H* says to himself in internal speech such phrases as "detective on my track, I mustn't incriminate myself" or "now we are on the path of the story, I must be careful." *E* seems to place herself each time in the situation suggested by the stimulus; she reads the story or event into every stimulus-word, and if it is not a critical one she usually has a verbal idea of "I'm all right, perfectly safe," and the tense strain and kinaesthetic sensations give way to "a sense of relief and peace." It is unnecessary to multiply the examples. The recognition of the irrelevancy of a given stimulus-word usually leads at once to an indifferent association.

As soon, however, as the connection between the stimulus and the chosen material is discovered, a stage of suppression sets in, or, as one observer says, "there is great difficulty in retaining a 'give away' reaction-word." This is to us the most important similarity between the two kinds of consciousnesses to be compared. *Gu* says: "The recognition that the stimulus is a critical one makes me strive to get away from the experimental material as quickly as possible," and likewise *E* writes that when a critical word appears she tries to get away from the influence of the dangerous material in order to find some non-incriminating connection. The other observers tell of similar suppressions of incriminating associations. *H*, for example, says in one case: "The knowledge of the picture seems to possess me like an obsession, and I can get no other thought." In other words, we have here the same two phenomena as in the N.I. experiments, on the one hand the failure of a negative instruction to keep forbidden ideas entirely out of consciousness, and on the other hand the successful avoidance of their motor discharge, that is, the inhibition of the reaction of articulation. Although some of the present introspections are not as detailed and technical as those in the N.I. experiments, it is nevertheless possible to divide most of these descriptions of the suppression into the two classes of attitudinal and ideational suppression that were found in the N.I. investigation. The attitudinal suppression, for example, is very strikingly intimated by *K* when he says that "the whole state of inhibition is something like the feeling one has when told by a doctor to say 'ah' while

he holds down the tongue with a spoon." Another illustration is given by *Ba* who describes the suppression as a "tendency to hold the breath, a rigidity of the muscles of the throat, accompanied by a fixed staring of the eyes," while four observers speak of their tongue as involved in the inhibitory process or mention tight closing of the eyelids, frowning and squinting. As examples of the ideational form of suppression we may quote *Ba*'s words: "Oh, I can't say this, for the stimulus is connected with the story;" and *K*'s introspection after the critical stimulus 'execution': "In the background of consciousness there seemed to lurk, with uncompromising persistence, that danger reaction 'guillotine' and the verbal idea 'if you don't give that it will be hard to find another reaction.'"

The realisation of the connection between the stimulus-word and the selected material is described in most cases in terms of visual and verbal imagery. This realisation is, of course, one of the inessential differences between the two kinds of mid-periods compared, and is due to the peculiar experimental condition of distributing significant words among irrelevant stimuli. Another difference in the two stages of suppression is the stronger unpleasantness accompanying the effort to suppress an incriminating idea. *G* has described the feelings or emotions which in his case characterise the presence of a complex as "excitement and anxiety on the one hand, and relief on the other."⁸ Other observers speak of "an indescribable state of anxiety," of "effort and strain," of "a feeling of helplessness," of "a feeling of breathlessness and a wild desire to escape from all ideas suggested by the critical word," of "a feeling of despair," and the like. The exaggeration of this emotional aspect in Freudian complexes, especially in subnormal minds, seems to have obscured a more critical and analytical view of the true nature of the consciousness of concealing, and to have prevented psychologists from seeing it in its normal aspects. It seems to us that the emotional feature is essential neither to the act of concealing or suppressing nor to the original complex itself which sets up the determination to conceal or to suppress. Whether the additional emotional aspect is responsible for most of the abnormal consequences of suppression is another question; but it seems to us that most of the complexes of normal everyday life are not marked by very strong feelings. The main emphasis must be put on the stage of suppression itself, and its conscious and (hypothetical) neural mechanism has been fully described in the previous article on consciousness under negative instruction.

It must be likewise understood that the stage of suspense or search, the last of the three stages of the mid-period, is only a by-product of the peculiar experimental conditions which require an association-reaction in the shortest possible time-interval. This requirement is a new instruction in itself, which sets up a separate determining tendency and which is interfered with in its normal course by the preceding stage of suppression. This stage of suspense is described by our observers in cases where no ideas will come into focus as "a groping attitude," "a floundering of ideas;" there is "a feeling of the awful passage of time," "a search for new connections," a situation in which "nascent processes seem all in a jumble, so that no one idea can be seized," a state in which "the light has been taken away and left a gray voidness," or "a period filled with vague, indefinite thoughts" for the expression of which the observer

⁸ *Op. cit.*, 601.

is "unable to get any words, a stunned, helpless feeling." One typical concrete description of this whole stage of suspense may be quoted from *H*, who says "after the critical word 'sofa' was rejected, one verbal idea after another came. I felt each one, but could not form the corresponding words. Two or three seemed to come almost simultaneously, and it was hard to say which idea came first. A mood of indecision marked the entire period. I mentally compared the images, one with another, and the more I did this, the greater became my anxiety over the extremely long time. I was trying to form a reaction, yet I could not select any one of these images." Frequently the stimulus word is mechanically repeated several times in internal speech until a safe association arises.

The after-period in these experiments is again like that in the N.I. reactions, in that it contains the same kind of feeling of satisfaction and the same kind of self-justification or self-criticism with regard to the nature of the given response. *O* says, for example, "After having given a response, I try to analyse it again with reference to the significance of the stimulus word;" *E* says that she has "a feeling of justification after having spoken a word that could have no reference to the critical material;" and others make similar assertions. This shows that, as in the case of the N.I. experiments, "the mental processes of the after-period are still under the influence of the determining tendencies set up by the instruction." How much, in fact, the whole consciousness is under their influence is easily seen from the external behavior of the observers during a critical experiment. The experimenter often noted contracted eye-brows, tightened lips, squinting of the eyes, raising and bowing of the head, clenching of the fist, restless movements of the feet, uneasy stirring of the body, deep breathing, and quick short laughs seemingly of relief that a successful response had been made.

We have now shown how close the parallel is between the consciousness of concealing a complex in the association-reactions and the consciousness under negative instruction, and we hope that this comparison has thrown some new light on the two phenomena. Whatever complications may enter into the consciousness of a Freudian complex, as met in everyday life or even in subnormal minds, they do not seem to us to be of such a nature as to obstruct seriously the subordination of the particular effort to conceal under the general task not to do a certain thing. In conclusion it may be pointed out that our results furnish fresh evidence for the fruitfulness and reliability of the recently much debated psychological method of introspection.

⁷ *Ibid.*, 204.